Frequently Asked Questions Regarding Blasting

Clermont County Water Resources Department
Shayler Run Segment C Sewer Replacement Project

1. **Isn't blasting dangerous?** Persons who are inexperienced in the use of explosives are of the opinion that explosives in any form are agents of destruction. But, a fact they do not consider is that military explosives are especially designed to produce destruction, whereas, the commercial explosives are engineered to do work. Each day, all around the world, hundreds of thousands of pounds of explosives are detonated safely in the construction, mining, and quarrying industries. Competent blasters can design blasts that will fragment rock in the blast area and also keep ground vibration and noise levels within safe limits at neighboring structures.

2. **Who controls blasting?** Because explosives in the wrong hands can cause serious problems, federal regulations control the purchase, transportation and storage of explosives. There are also federal, state and local regulations that govern the safe use of explosives and limit the amount of ground vibration and noise that can be produced from blasting.

3. **Why is blasting necessary?** Blasting is the most cost efficient way to fracture rock, so that it can then be excavated with heavy earth moving equipment. In some cases, it is almost impossible to excavate without blasting. It reduces construction costs and shortens the project time.

4. **What happens when a blast is set off?** More than 90% of the energy is used in breaking the rock. The rest of the energy goes into the ground or air as vibrations and noise. The ground vibrations travel outward away from the blast the same way that ripples are generated by dropping a pebble in a pond of water. These vibrations cannot be seen but can be felt. The ripples (vibrations) decrease as they travel away from the energy source, and these ripples are about the height of the thickness of a sheet of paper by the time they reach neighboring structures. Underground structures (wells, pools, pipelines, and septic tanks) are even less likely to be damaged by vibrations than above ground structures.

5. **Can vibration and air blast be measured?** The ground vibration and air-borne concussion can be very accurately measured with a seismograph. A seismograph is a scientific instrument that is tested and calibrated in the lab before it is used in the field.

   An experienced blaster can predict and control the amount of vibration and noise that will be produced at your property. As an extra precaution, the contractor is using seismographs to measure these vibration effects at neighboring residences.

6. **If I can feel or hear the vibrations, does it mean my house is being damaged? How do people respond to blasting?** The response of individuals to blasting vibration will vary from person to person. People are more sensitive to vibrations than are the structures they occupy. The vibrations will be felt less when one is outside rather than inside, standing rather than sitting, and sitting rather than lying down. If you are talking, walking or busy around the house, the vibration will be less noticeable than if you are sitting with a cup of coffee. Vibrations that are accompanied by noise will appear to be stronger than the same vibration would be without noise.

   People can feel extremely low levels of vibration, which are many times lower than those required to do damage. Human activities such as walking, door slamming, closing windows or children running through the house will stress individual building components more so than safe blasting levels. The only accurate method to measure vibration intensity is with a seismograph.

7. **What are pre-blast inspections?** Many times before blasting begins, the contractor will employ an outside consultant to inspect your home. This inspection consists of taking exterior photos and documenting the existing conditions of the interior. This is done for his protection as well as yours, by providing a record prior to blasting. The inspector is a source of information regarding any questions you may have concerning blasting. For this project, the company performing the pre-blast inspections is Sauls Seismic, Inc.